Aspects of Risk Management Support for an Emergency Medicine Physician Workstation

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Emergency departments are high risk sites for malpractice events. EMstation™ is an Emergency Medicine Physician Workstation that incorporates tools to reduce malpractice risk in near real time (at the time of documentation). Based on a Microsoft Windows 3.1 interface, physicians are led through color-coded templates addressing known failure modes in emergency medicine. Risk management opportunities available at the time of charting when the patient is often still in the department allowing real time risk reduction are explored.

CURRENT RISK MANAGEMENT EFFORTS

The emergency department is the third highest risk setting based on malpractice claims, following only obstetric and operating rooms. Studies of these suits have consistently shown that a small set of repetitive clinical errors (missed MI's, appendicitis, ectopic pregnancy, subarachnoid hemorrhage, meningitis, missed tendon lacerations, and retained foreign bodies within wounds) generates over 50% of dollars paid out to plaintiffs.

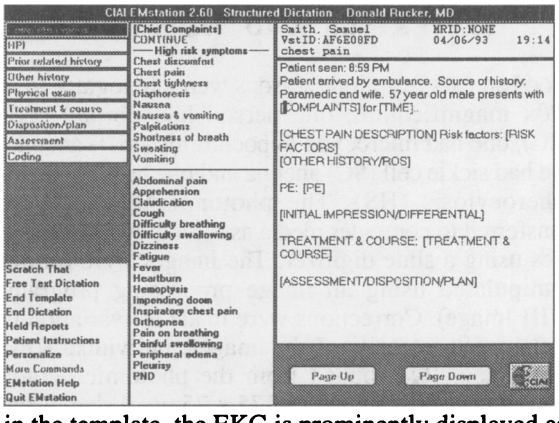
Currently manual audit such as chart review based on JCAHO criteria is a mainstay of risk management. These activities are generally based on handwritten or transcribed records. Current computerized efforts at risk management include clinical alerts, text string searches for high risk presentations, and electronically implemented documentation guidelines.

METHODS

EMstation 2.6 is a software and hardware package supporting both template based and free text dictation with an integrated database. It is written in Microsoft C with speech recognition by Dragon Dictate. EMstation represents over 40 person years of direct programming by a team of "C" programmers as well as a similar time spent by physicians designing templates. Templates support approximately 250 clinical scenarios. The core paradigm is the use of menu choices by voice or mouse. The templates are written in a programming language supporting Boolean logic to display text, calls to external databases or functions, and correct grammar for subject verb number agreement and complex noun phrases. At any point in generating the note, the physician can switch to free text.

INCORPORATING RISK MANAGEMENT

Risk management for high risk clinical presentations is incorporated directly into the templates rather than applied after the fact. The menus themselves highlight key symptoms, signs and lab examinations. Thus, in chest pain or related complaints, the physician is prompted for associated symptoms such as diaphoresis or palpitations (See Figure). Then he or she is asked about cardiac risk factors. Further on



in the template, the EKG is prominently displayed as the leading diagnostic maneuver. All high risk items are displayed in red. Users can select additional items to the color red. Two specific risk management tools are incorporated. One is a package of customizable patient instructions available at any time. Secondly, an emergency medicine risk management syllabus is packaged as a hypertext browser.[1]. The integral database offers quality assurance and risk management review options as well. Database capture of notes is automatic.

CONCLUSION

Malpractice events are still relatively rare, so the next phase of research will likely have to focus on process measures rather than outcome measures. The EMstation architecture for graphic user interfaces, multiple modality data entry, mixed template and free text dictation, customization tools, syntax correction, an integral records database, and workflow support offers opportunities for both ease of use and risk management.

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